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Discussions

Interactive comment on "The relationship between precipitation and insurance data for flood damages in a region of the Mediterranean (Northeast Spain)" *by* Maria Cortès et al.

Anonymous Referee #1

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General comments

The manuscript is analysing the link between the causes and impacts of floods by means of precipitation measurements and insurance claims. The main objective of this study is to identify the best indicators for describing this relationship. The topic is of great interest.

However, the manuscripts is weak due to a few but important points.

The use of the Spearman rank test on the data is to test the correlation between two indicators. However, this test is not providing any information for drawing conclusion. The correlation between precipitation and flood losses is to be expected and reported

anywhere. Indeed, other literature goes far behind correlation only and analyses the form of the relationship resp. provides e.g. minimal rainfall intensity thresholds for losses. The added value of this study is therefore disputable.

A detailed definition of the terms "floods", "pluvial floods", "flash floods" and "urban floods" is missing. It is not clearly defined which processes are relevant for the respective insurance claims. This is important because of the chosen approach in defining the aggregation units. Depending on the size of the aggregation unit, the spatial distances between rainfall (in the catchment) and flood impacts (in the floodplain) may be very different for riverine floods and pluvial floods (in situ precipitation).

The authors chose three different spatial aggregation units: regional, basin, and local scale. With this, the study ignores the Modifiable Areal Unit Problem (MAUP) as described in Openshaw (1984). The size and shape of the aggregation units may influence the results of the test. This arises because the authors do not explicitly differentiate between losses to houses due to pluvial floods and riverine floods as exemplarily shown by Bernet et al. in this special issue (https://doi.org/10.5194/nhess-2017-136).

The interpolation of the rainfall measurements of the single stations and the aggregation method to the different spatial units is not described.

The authors analyse insurance claims in the period 1996-2015. While the compensations are adjusted with the consumer price index, the increase in the total stock resp. changes in the overall exposure to potentially flooded areas in this period are not considered. In the study period, a relatively high increase in the total building stock should be expected due to the construction activities before the financial crisis in 2008. Thus, the losses in the insurance dataset may be supposed to a remarkable instationarity.

The analysis of the correlation between precipitation and compensation paid was made on the basis of the recorded flood events (or flood episodes). The definition of a flood event (above 75th percentile) is not made transparent resp. not clearly enough described. The paper has to be reworked fundamentally.

References: Openshaw, Stan, 1984. TheModifiable Areal Unit Problem. Geo Abstracts Univ. of East Anglia, Norwich (Catmog: concepts and techniques in modern geography).

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2017-278, 2017.